

## **Recipients of the 2006 Haagen-Smit Clean Air Awards**

The California Air Resources Board proudly announces the recipients of the 2006 Haagen-Smit Clean Air Awards:

**Mr. James D. Boyd – Environmental Policy**

**Dr. Axel Friedrich – Emission Reduction Technologies**

**Professor Arthur Winer –Air Pollution Science**

### **James D. Boyd**

Mr. James Boyd is currently a Commissioner of the California Energy Commission where he actively seeks consensus to balance energy, economic, and environmental concerns with public health and welfare. His long and distinguished career as a public servant and air quality advocate includes serving as Deputy Secretary in the California Resources Agency, Assistant Director in the California Department of Fish and Game, Executive Officer of the California Air Resources Board, and additional managerial positions in the Health and Welfare Agency, the Department of Health, the Department of Water Resources, and the Department of Finance. His foundational understanding of issues combined with his open and fair-minded approach to addressing concerns while resolutely moving forward to protect public health and welfare has earned the respect and admiration of all perspectives on complex issues. One of the biggest testaments to his professionalism and problem-solving skills is his 15-year tenure as the Executive Officer of the California Air Resources Board, when he served five different Chairs and three Governors of varied political persuasions.

During Mr. Boyd's tenure at Air Resources Board, regulations governing cleaner burning gasoline, clean diesel fuel, electric vehicles, and ever lower emission standards from cars and trucks leading to the Ultra Low Emission Vehicle programs were adopted. Under his direction, statewide emissions from mobile sources of pollution were reduced 44% for ROG, 43% for CO, 8% for NO<sub>x</sub>, 50% for SO<sub>x</sub>, and 6% for PM. Ambient concentrations of O<sub>3</sub> and PM, California's most serious pollutants, in the South Coast Air Basin, California's most populous and polluted air basin, declined more than 40 and 25%, respectively – truly a remarkable achievement in a rapidly growing region. Furthermore, concepts on cap and trade for locomotives and stationary sources were implemented for the first time under Mr. Boyd's leadership. During Mr. Boyd's

stewardship of the California's air resources, continuous monitoring of emissions from stationary sources was first adopted at the air quality districts. The control systems, lower emission profiles, and new technologies dominating emission sources in California today owe much to Mr. Boyd's vision and leadership.

At the Resources Agency Mr. Boyd created and chaired the State's first Joint Agency Climate Change Team and State Natural Gas Working Group. At the California Energy Commission, Mr. Boyd has overseen the critical Integrated Energy Policy Reports, and presently chairs the Transportation Fuels and Natural Gas Committees. Mr. Boyd is the state's liaison to the Nuclear Regulatory Commission, and California's representative on the Border Governors' Conference Energy Worktable, and the Energy Commission's representative on the Steering Team of the California Fuel Cell Partnership and the Board of Directors of CALSTART. He served on the Governor's Hydrogen Highway Network Implementation Advisory Panel and presently serves on the Governors Climate Action Team. Mr. Boyd continues to be a key player for reducing future air pollutant emissions by advocating efficient energy use. He presently leads the Bioenergy Interagency Working Group that developed and is now implementing the Governor's Bioenergy Action Plan. He is overseeing the Commissions efforts to develop alternative transportation fuels plans requested by the Governor and Legislature. Mr. Boyd's active and insightful participation on many and varied air quality associations, boards, commissions, and committees makes him a great role model and an ideal recipient of the 2006 Haagen-Smit Clean Air Award.

### **Axel Friedrich, Ph.D.**

Dr. Axel Friedrich currently heads the Environment, Transport, and Noise Division of the German Environmental Protection Agency. He was the moving force behind the initial adaptation by Germany, and later Europe, of stringent standards for vehicles and fuels.

From fuel savings from low rolling resistance tires to more than a 99% reduction in ultra fine particle emissions from Euro V diesel trap filter programs, Dr. Friedrich and his staff of scientists and visionaries have pioneered the European emission reduction program through technological adaptation. Dr. Friedrich and his staff have developed innovative ideas into aids for technological emission reductions by using tax incentives for early introduction of low emission technological advancements, monitoring real-world on-road emissions on a continuous basis, introducing robust programs for verifying promised emission reductions, and better quantifying the land use planning-road building impact on air quality. Dr. Friedrich was also the principal behind Germany's mobile source emission inventory simulation programs now used throughout the European Union. Comparing 2010 emission profiles to those at the turn of the century, these innovations will have resulted in emission reductions often equaling 80% to 90% for nitrogen oxides, particles, and hydrocarbons. From 1990 to 2003 alone, European Unions then 15 member states had reductions in CO emissions ( $24 \times 10^9$  metric tons),  $\text{SO}_x$  ( $11 \times 10^9$  metric tons), VOC ( $6 \times 10^9$  metric tons), and  $\text{NO}_x$  ( $4 \times 10^9$  metric tons). Much of these reductions can be attributed to Dr. Friedrich's championing of new emission control technologies.

His unselfish willingness to share his knowledge and expertise with the international community has helped reduce air pollution not only in Europe but also the Americas and Asia. He has also been a moving force in helping to guide the European Union toward its adaptation and implementation of aggressive programs to address greenhouse gas emissions and global climate change. As the global threats posed by air pollution became more evident, he helped to launch World Bank programs to reduce air pollution in Asia and Latin America. Dr. Friedrich's passionate interest in confronting air pollution and climate change on a global scale with comprehensive and multi-faceted approaches makes him an ideal recipient of the 2006 Haagen-Smit Clean Air Award.

### **Arthur Winer, Ph.D.**

Dr. Arthur M. Winer is Distinguished Professor of Environmental Health Sciences at the University of California, Los Angeles, School of Public Health. His 35-year career in air pollution research and teaching began in 1971 at UC Riverside's Statewide Air Pollution Research Center where he worked with Dr. James N. Pitts, Jr. and served as Associate Director of SAPRC from 1978 to 1986. Although his research interests have been diverse, topical, and extensively published in nearly 200 peer-reviewed journal articles, Dr. Winer's legacy may be best defined by the remarkable number of graduate students he has mentored and taught to think critically about how to conduct air pollution research. He has trained a large fraction of the next generation of air pollution specialists who are addressing current air quality issues related to atmospheric chemistry, ozone, fine and ultra-fine particles, toxic air contaminants, biogenic emissions, global atmospheric processes, and the exposure of susceptible populations to a wide range of air pollutants.

For nearly two decades, Dr. Winer has been a core faculty member in the UCLA Environmental Science and Engineering (ESE) Program and was the Program's Director and Chair between 1989 and 1997. He has provided academic and professional guidance to nearly all of the more than 200 alumni of the ESE Program. His influence is widely felt as ESE Program graduates fill important leadership positions at the Air Resources Board, South Coast Air Quality Management District, Army Corp of Engineers and U.S. Environmental Protection Agency. Dr. Winer has been selfless in supporting his students with his boundless time, energy and enthusiasm.

Dr. Winer has actively served on many professional committees and advisory groups and has been a strong advocate for clean air quality. His scientific guidance has effectively informed and influenced air pollution policy in California, as well as nationally and internationally. Dr. Winer's active involvement for over 35 years in air quality research, development of environmental policy, and the training of our air pollution scientists and policy-makers, makes him an ideal recipient of the 2006 Haagen-Smit Clean Air Award.